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## Descriptions of Three New Species Allied to *Diplurodes parvularius* (LEECH) (Geometridae, Ennominae) from Southeast Asia

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**Abstract** Three new species, allied to *Diplurodes parvularius* (LEECH), are described from Sumatra, Palawan and Luzon, respectively.

**Key words** Lepidoptera, Geometridae, Ennominae, *Diplurodes*, taxonomy.

*Diplurodes parvularius* \* (LEECH, 1891 : 47) was described based on a pair of specimens collected at Gifu, Central Honshu, Japan, and later was recorded from Taiwan, Borneo and Sikkim by HOLLOWAY (1976). And Taiwanese population was separated from the nominotypical race under the name of *owadai* by INOUE (1987 : 247). My close examination shows that Indonesian material of “*parvularius*” is clearly distinct from Japanese one in the structure of male and female genitalia. Moreover I found two new species closely related to them from Palawan and Luzon, the Philippines, respectively.

The following abbreviations are used to indicate the location of specimens. ZMC : Zoologisk Museum, Copenhagen, Denmark. NSMT : National Science Museum (Natural History), Tokyo. BMNH : British Museum (Natural History), London. HI : Dr. H. INOUE. RS : R. SATO.

### *Diplurodes karsholti* sp. nov.

(Fig. 3)

Length of forewing : ♂ 11–13mm.

Similar to *parvularius* (Fig. 1), but differing as follows : ciliation of male antenna a little longer ; postmedial lines on both wings ill-defined except on veins, curved more weakly between veins  $M_1$  and  $M_2$  ; under surface of both wings more clearly marked, densely suffused with black distad of postmedial line on forewing.

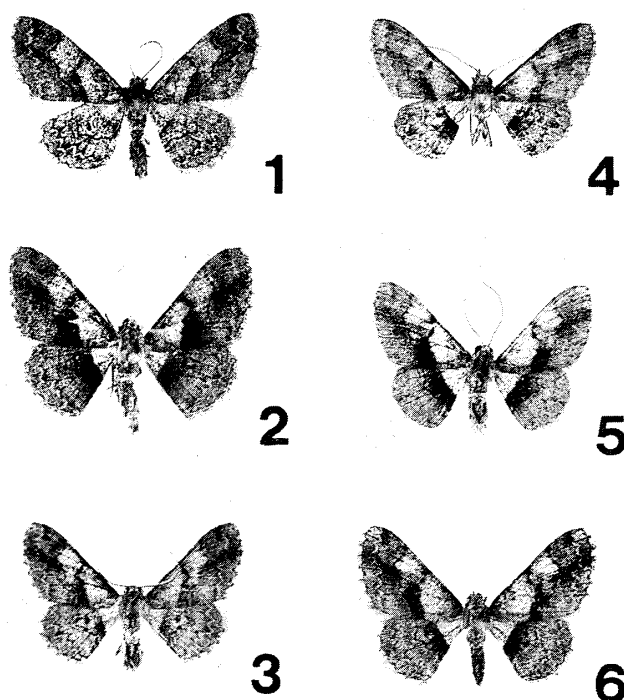
Male genitalia (Figs. 8, 12). Similar to those of *parvularius* (Figs. 7, 11), but valva ampler ; harpe longer and gradually broadened toward the apex, densely covered with spinules from basal one-third to apex along dorsal margin of harpe ; slender projection arising from the basal part of harpe more strongly curved.

Female genitalia. Not examined.

Holotype. ♂, labelled, “Philippines, Palawan, Mantalingajan, Tagembung 1150

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\* The generic name *Diplurodes* is the masculine in gender. The specific name *parvularia* used so far must be changed to *parvularius*.



Figs. 1–6. *Diplurodes* spp. 1. *D. parvularius parvularius* (LEECH), ♂, Japan; 2. *D. parvularius owadai* INOUE, ♂, Taiwan; 3. *D. karsholti* sp. nov., ♂, holotype, Palawan; 4. *D. luzonensis* sp. nov., ♂, holotype, Luzon; 5. *D. hollowayi* sp. nov., ♂, holotype, Sumatra; 6. *Ditto*, ♂, paratype, Malaysia.

meter, 18. Sept. 1961, Noona Dan Exp. 61–62/Caught by Mercury-light, 18.00–06.00/Zool. Museum. DK Copenhagen”, ZMC. Paratypes. 9♂, Palawan. 3♂. same data as holotype; 6♂, loc. cit., 17. Sept. 1961; 4♂, loc. cit., 19. Sept. 1961, ZMC.

Distribution. Philippines: Palawan.

Remarks. The Noona Dan Expedition covered several areas in the Philippines and the Bismarch and Solomon Islands from August 1961 to September 1962. The details of the expedition were given by PETERSEN (1961), with special reference to entomology.

*Diplurodes luzonensis* sp. nov.

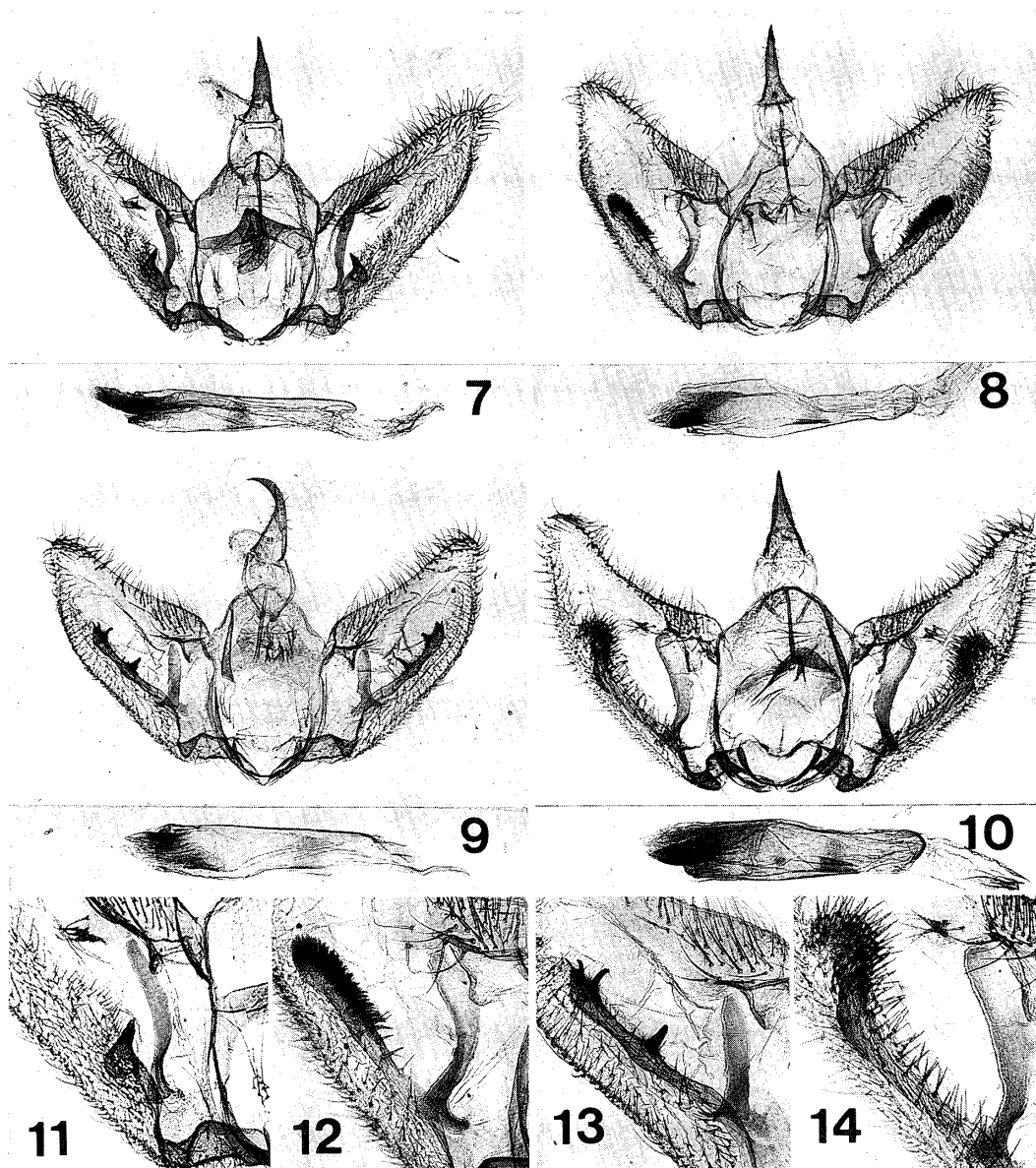
(Fig. 4)

Length of forewing: ♂ 12mm.

Ciliation of male antenna as long as in *karsholti*. A black band running inside of postmedial line more developed than in *parvularius* and *karsholti* at posterior half. Rather more similar to ssp. *owadai* (Fig. 2) than to the nominotypical race (Fig. 1) of *parvularius*, but easily distinguished from it by the genitalia as follows.

Male genitalia (Figs. 9, 13). Harpe nearly as long as in *karsholti* (Fig. 12), both sides not smooth, but bearing three long and strong spines instead of many spinules in *karsholti*; basal slender projection of harpe shorter and straight.

Female genitalia. Not examined.



Figs. 7–14. Male genitalia of *Diplurodes* spp. 7. *D. parvularius owadai* INOUE. Slide RS-2783; 8. *D. karsholti* sp. nov. Slide in ZMC; 9. *D. luzonensis* sp. nov. RS-2679; 10. *D. hollowayi* sp. nov. RS-2782; 11–14. Harpe enlarged. 11. *D. parvularius owadai* INOUE; 12. *D. karsholti* sp. nov.; 13. *D. luzonensis* sp. nov.; 14. *D. hollowayi* sp. nov.

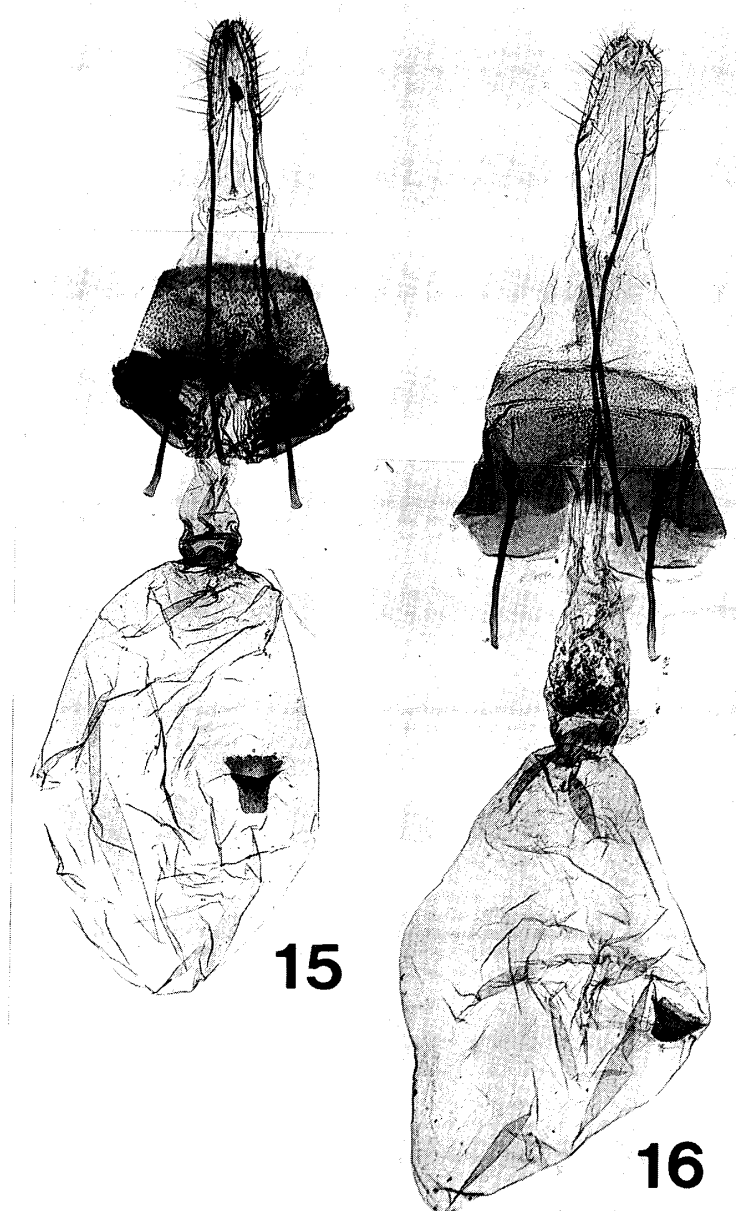
Holotype. ♂. Philippines, North Luzon, Mt. Pulis, 16km SSE Bontoc, Nebeluwald 1900m, 9–13. Feb. 1988 (CERNY & SCHINTLMEISTER), NSMT.

Distribution. Philippines: Luzon.

*Diplurodes hollowayi* sp. nov.

(Figs. 5–6)

Length of forewing. ♂ 12–13mm, ♀ 13–14mm.



Figs. 15, 16. Female genitalia of *Diplurodes* spp. 15. *D. parvularius parvularius* (LEECH). RS-2785; 16. *D. hollowayi* sp. nov. RS-2877.

Similar to both *parvularius owadai* and *luzonensis*, but both wings tinged with purple distad of postmedial lines; a central black band most clearly defined by contrast with paler basal area. Ciliation of male antenna as long as in *parvularius*.

Male genitalia (Figs. 10, 14). Similar to those of *karsholti* (Figs. 8, 12), but differing as follows: uncus broader; valva a little narrower apically, harpe covered with spinous setae more sparsely; basal slender projection of harpe straight as in *luzonensis*, but much stouter and broadened toward the apex; rectangular cornutus larger.

Female genitalia (Fig. 16). Similar to those of *parvularius* (Fig. 15), but differing as follows: lamella antevaginalis wider, but sclerotized more weakly; lamella postvaginalis wider and with slender sclerotization medially.

Holotype. ♂. North Sumatra, Holzweg II 1050m, 18km to Prapat, 26. May. 1986 (E. W. DIEHL), NSMT. Paratypes. 4♂, 6♀. North Sumatra. 1♂, type locality, 22–24. July. 1985 (R. SATO), BMNH; 2♂, Prapat, 15. May–3. June. 1983, RS, 1♂, loc. cit., 10. May. 1983 (E. W. DIEHL), NSMT. West Sumatra. 3♀, Bukit Subang, Bergurwald 1200m, 22km E. Padang, 19. Oct. 1981 (SCHINTLMEISTER, ROESLER & WIDAGDO), 1♀ BMNH, 2♀ RS. Borneo. 1♀, Sabah, Mt. Kinabalu 1620m, Park Headquarter, 21. Feb. 1980 (H. ARIMOTO), RS. Malaysia. 1♀, Genting Highlands 1700m, 6–8. Apr. 1986, RS; 1♀, Cameron Highlands 1500m, 10–11. Apr. 1986 (K. YAZAKI), RS; 1♀, loc. cit., 3. July. 1966 (H. INOUE), HI; 1♀, loc. cit., 1984 (native collector), HI.

Distribution. Malaysia, Borneo, Sumatra, Sikkim.

Remarks. HOLLOWAY's (1976: 80) *parvularius* from Borneo is apparently identical with this new species, judging from his figures of the male specimen (pl. 26: 324) and its genitalia (Fig. 610). It is clear that he had a doubt about its systematic treatment, because he illustrated both figures under the name of "*D. parvularia* (LEECH) or close". "*Parvularia*" from Sikkim recorded by HOLLOWAY at the same time is also very probably identical with this new species.

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### 摘 要

東南アジア産ハラゲチビエダシャクに近縁の3新種 (佐藤力夫)

*Diplurodes parvularius* (LEECH)ハラゲチビエダシャクは、岐阜を模式産地とし、東北地方から九州まで広く分布している種である。HOLLOWAY (1976) は、Borneo, Taiwan, Sikkimから*parvularius*を記録したが、図版のlegendでは、"*parvularia* or close"として別種の可能性も示唆している。その後INOUE (1978)

は、Taiwanの個体群を別亜種として認め*owadai*を記載した。今回東南アジア各地の標本を検討した結果、HOLLOWAYの“*parvularia*”は明らかに独立種であることが判明し、さらにPhilippinesのPalawanとLuzonからそれぞれ別種を見いだすことができたので、次のように新種として記載した。

*D. karsholti* sp. nov. Philippines: Palawan.

*D. luzonensis* sp. nov. Philippines: Luzon.

*D. hollowayi* sp. nov. Malaysia, Borneo, Sumatra, Sikkim.

なお属名の*Diplurodes*は男性として扱うべきもので、従来使われてきた*parvularia*は、上記のように変える必要がある。

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